



MIAMI-DADE COUNTY, FLORIDA
 METRO-DADE FLAGLER BUILDING
 140 WEST FLAGLER STREET, SUITE 1603
 MIAMI, FLORIDA 33130-1563
 (305) 375-2901 FAX (305) 372-6339
www.miamidade.gov/buildingcode

**BUILDING CODE COMPLIANCE OFFICE (BCCO)
 PRODUCT CONTROL DIVISION
 NOTICE OF ACCEPTANCE (NOA)**

Sol-A-Trol Aluminum Products, Inc.
 4101 N.W. 132nd Street
 Miami, FL 33054

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Series 540 Aluminum Single/Double Hung Window with Louvers – L.M.I.

APPROVAL DOCUMENT: Drawing No. **1-IMPACT**, titled "Series 540 Single/ Double Hung Window with Louvers", sheets 1 through 10 of 10, dated 08/20/04, prepared by Sol-A-Trol Aluminum Products, Inc., signed and sealed by Ballard L. Argus, P.E., bearing the Miami-Dade County Product Control Renewal stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

REVISION of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **renews NOA # 05-0125.02** and consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Manuel Perez, P.E.**



NOA No. 08-0324.04
Expiration Date: March 20, 2013
Approval Date: April 17, 2008
 Page 1

Sol-A-Trol Aluminum Products, Inc.

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
2. Drawing No **1-IMPACT**, titled "Series 540 Single/ Double Hung Window with Louvers", sheets 1 through 10 of 10, dated 08/20/04, prepared by Sol-A-Trol Aluminum Products, Inc., signed and sealed by Ballard Argus, P.E.
(Submitted under NOA# 05-0125.02)

B. TESTS

1. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94 along with marked-up drawings and installation diagram of a 16-1/2" x 33-3/4" series 540 louver window, prepared by Hurricane Engineering & Testing Inc., Test Report No. **HETI-04-1386C**, dated June 30, 2004, signed and sealed by Rafael E. Droz-Seda, P.E. *(Submitted under NOA# 05-0125.02)*
2. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94 along with marked-up drawings and installation diagram of a 32-1/8" x 65-1/8" series 540 louver window, prepared by Hurricane Engineering & Testing Inc., Test Report No. **HETI-04-1386B**, dated June 30, 2004, signed and sealed by Rafael E. Droz-Seda, P.E. *(Submitted under NOA# 05-0125.02)*
3. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94 along with marked-up drawings and installation diagram of three 49" x 97-1/2" series 540 louver windows, prepared by Hurricane Engineering & Testing Inc., Test Report No. **HETI-04-1386A**, dated June 02, 2004, signed and sealed by Rafael E. Droz-Seda, P.E. *(Submitted under NOA# 05-0125.02)*
4. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Forced Entry Test, per FBC 2411 3.2.1, TAS 202-94
Along with marked-up drawings and installation diagram of the series 540 aluminum single/double hung windows w/louvers, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-3059**, dated August 7, 2001, signed and sealed by Luis Antonio Figueredo, P.E. *(Submitted under NOA# 01-1016.04)*

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with FBC-2004, dated May 13, 2004, prepared, signed and sealed by Ballard Argus, P.E.
Complies with ASTM E1300-02 *(Submitted under NOA# 05-0125.02)*


Manuel Perez, P.E.
Product Control Examiner
NOA No. 08-0324.04
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Sol-A-Trol Aluminum Products, Inc.

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D. QUALITY ASSURANCE

1. Miami Dade Building Code Compliance Office (BCCO).

E. MATERIAL CERTIFICATIONS

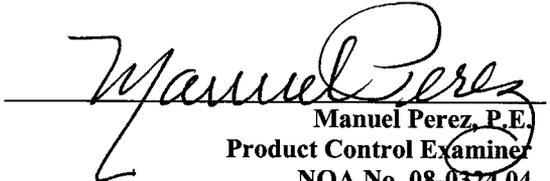
1. None

F. STATEMENTS

1. Statement letter of name change, dated March 18, 2008, prepared and signed by Sammy De La Hoz.
2. Statement letter of conformance and that he is still in practice, prepared by Argus Architecture Engineering, L.L.C., dated January 31, 2008, signed and sealed by Ballard Argus, P.E.
3. Statement letter of compliance, dated July 12, 2005, prepared, signed and sealed by Ballard Argus, P.E. *(Submitted under NOA# 05-0125.02)*
4. Statement letter of no financial interest, dated November 8, 2002, prepared, signed and sealed by Ballard Argus, P.E. *(Submitted under NOA# 01-1016.04)*
5. Statement letter of conformance, dated November 8, 2002, prepared, signed and sealed by Ballard Argus, P.E. *(Submitted under NOA# 01-1016.04)*
6. Laboratory independence letter for Test Report no. **HETI-04-1386A, HETI-04-1386B and HETI-04-1386C**, prepared by Hurricane Engineering & Testing Inc., dated June 30, 2004, signed and sealed by Rafael E. Droz-Seda, P.E. *(Submitted under NOA# 05-0125.02)*
7. Laboratory compliance letter for Test Report no. **FTL-30595**, prepared by Fenestration Testing Laboratory, Inc., dated August 8, 2001, signed and sealed by Luis Figueredo, P.E. *(Submitted under NOA# 01-1016.04)*

G. OTHER

1. Notice of Acceptance No. **05-0125.02**, issued to Arso Enterprises d/b/a Sol-A-Trol Aluminum Products, Inc. for their Series 540 Aluminum Single/Double Hung Window with Louvers-Impact", approved on 05/12/05 and expiring on 03/20/08.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 08-0324.04
Expiration Date: March 20, 2013
Approval Date: April 17, 2008

Series 540 Aluminum Single Hung/Double Hung Window with Louvers
Product Approval Submittal Drawings

General Notes:

- Product Approval drawings are based on the following Test Report:
 - Test Report No. FTL-3059, No Reinforcement, 1/4" Tempered Glass with .320" minimum bite, 2 3/4" Sill -- with screen and aluminum louvers.
 - Test Report No. FTL-3059, No Reinforcement, 1/4" Tempered Glass with .320" minimum bite, 4" Sill -- with screen and aluminum louvers.
- Drawings provide anchor information for 4000 psi Structural Concrete/CBS construction only.
- Window Minimum Hardware Requirements:
 - Four (4) spring and pulley balances, with I.D. BSI -- locate two (2) at each frame jamb.
 - Two (2) surface mounted metallic cam locks, with I.D. BC 49 -- locate at bottom vent top rail, 9 1/2" from each end.
 - Two (2) surface mounted keepers, with I.D. BC 39 locate at top vent bottom rail, 9 1/2" from each end.
 - Four (4) plastic vent guides, with no I.D. marks -- locate one (1) at each end of each vent top rail.
 - Four (4) steel balance clips, with I.D. marks -- locate two (2) at each frame jamb, 90 1/2" and 92" from bottom.
 - Two (2) surface mounted lever type cam locks, operating louvers, with I.D. Solatrol -- locate at left frame jamb, 16" and 58" from bottom.
 - Fifty-four (54) aluminum pivot hinges, with no I.D. marks -- locate one (1) at each end of each louver.
 - Four (4) aluminum slide bar assemblies, 3/4" x 47" long, with no I.D. marks -- locate one (1) at each frame jamb.
- Weatherstripping Requirements:
 - Single row vinyl bulb -- locate at the frame sill on the exterior.
 - Single row, wool pile with integral plastic fin -- locate at the top vent bottom rail and on the interior and exterior of the frame head, and at each vent jamb rail.
 - One (1) strip of pile weatherstrip, 1 3/8" long, -- locate at each end of the top vent bottom rail and at the bottom vent top rail.
 - One (1) vinyl flap -- locate at the bottom vent bottom rail, at the interior sill flange, and at the top of each louver.
 - One (1) adhesive backed closed cell foam pad, 1" x 1 1/2" x 1/2" high -- locate at each lower frame corner.
 - One (1) adhesive backed closed cell foam pad, 5/8" x 44 7/8" x 1/4" high -- locate at the interior of the bottom vent bottom rail.
 - One (1) adhesive backed closed cell foam pad, 5/8" x 1" x 1/4" high -- locate at the left end of the bottom vent bottom rail.
- No weepholes provided.
- All structural framing members are to be Aluminum Alloy 6063-T5 x .078" typical wall thickness.

Notes for Anchors into Structural Concrete/CBS Construction:

- Typical Concrete Anchor Type is 1/4" Dia. Tapcon with the following embedment depths:
 - For 4000 psi structural concrete -- use 1 3/4" embedment depth.
 - For Hollow Concrete Block -- use 1 1/4" embedment depth.
- Minimum Concrete Anchor quantities are depicted as solid lines located around the perimeter of each test unit elevation, drawn perpendicular to the frame.
- Maximum shim space between the window frame and the concrete/wood buck substrate = 1/4".
- Minimum 1/4" Dia. Tapcon Edge Distance from edge of Concrete/Block = 2 1/2" (10 Dia.).
- Minimum Spacing between adjacent 1/4" Dia. Tapcon Anchors = 3" (12 Dia.).

Maximum Anchor Spacing Requirements:

- Head and Sill Frame Anchors:
Test Report No. FTL-3059:
Locate anchors 6" maximum from frame ends and 12" o.c. maximum, per test mock-up.
- Jamb Frame Anchors:
Test Report No. FTL-3059:
Locate anchors 6" maximum from frame ends and 13 3/4" o.c. maximum, per test mock-up.
- Meeting Rail Anchors:
Test Report No. FTL-3059:
Locate one (1) jamb anchor/anchor group 3" above the meeting rail C.L. and one (1) jamb anchor/anchor group 3" below the meeting rail C.L.
- Above anchor spacing are maximums -- spacing between adjacent anchors must be not less than 3" o.c.
- Elevations are scaled views of the "Test Size" Units the Test Report listed above.
- Locate Head, Sill, Jamb, and Meeting Rail Anchors for other size units per notes 1, 2, 3, and 4 -- also, refer to "Comparative Analysis" tables for minimum anchor quantities required for window frame sizes listed.

UNIT TEST SIZE:
48" X 96 1/2"

MINIMUM DESIGN PRESSURE RATINGS AT MAXIMUM SIZE:
POSITIVE WINDLOAD = +Dp= +75.0 PSF
NEGATIVE WINDLOAD = -Dp= -75.0 PSF

MAXIMUM DESIGN PRESSURE RATINGS:
POSITIVE WINDLOAD = +Dp= +106.7 PSF
NEGATIVE WINDLOAD = -Dp= -210.0 PSF

SEE CHARTS ON SHEETS 9 & 10 FOR ALLOWABLE
DESIGN PRESSURE RATINGS FOR SPECIFIC SIZE
WINDOWS

BALLARD L. ARGOS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324



8/30/04
FLORIDA No. 35686, CIVIL

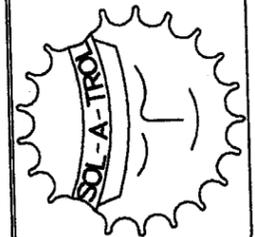
DADE COUNTY SEAL:

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 05-0125.02
Expiration Date MARCH 20, 2008

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No. 08-0324.04
Expiration Date 03/20/2013
By *Manuel Perez*
Miami Dade Product Control
Division

By *Manuel Perez*
Miami Dade Product Control
Division

SOL-A-TROL
aluminum products
4101 N.W. 132nd Street
Miami, Florida 33054
Phone: (305) 681-2020
Fax: (305) 681-2035

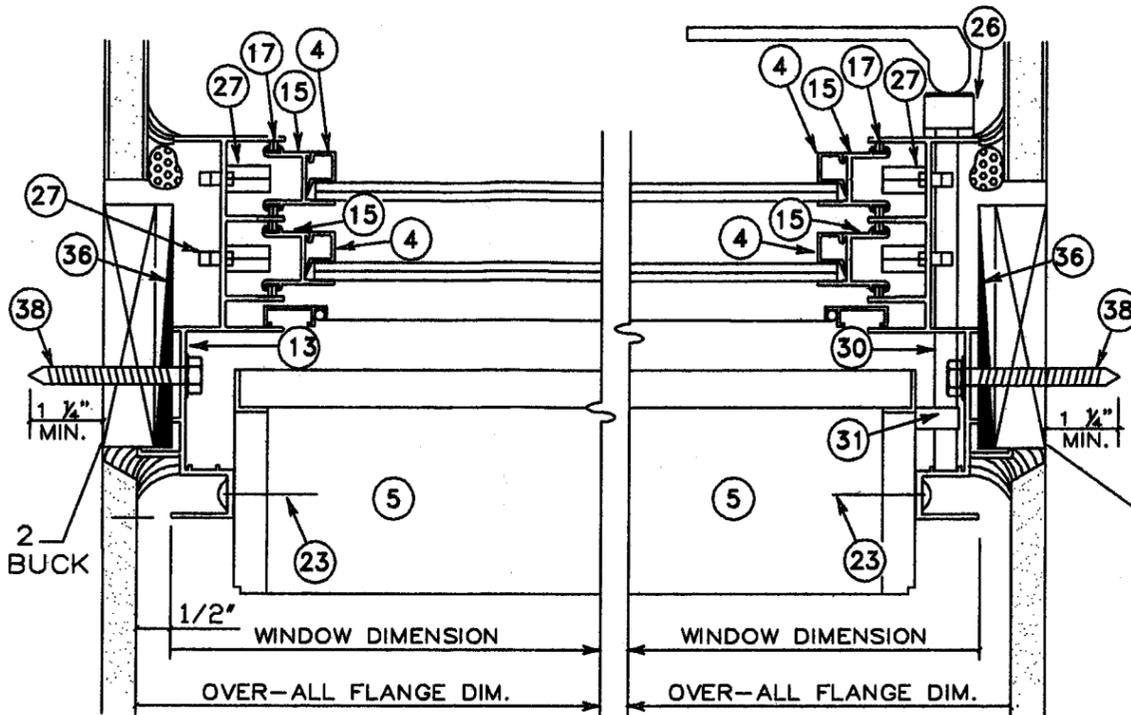
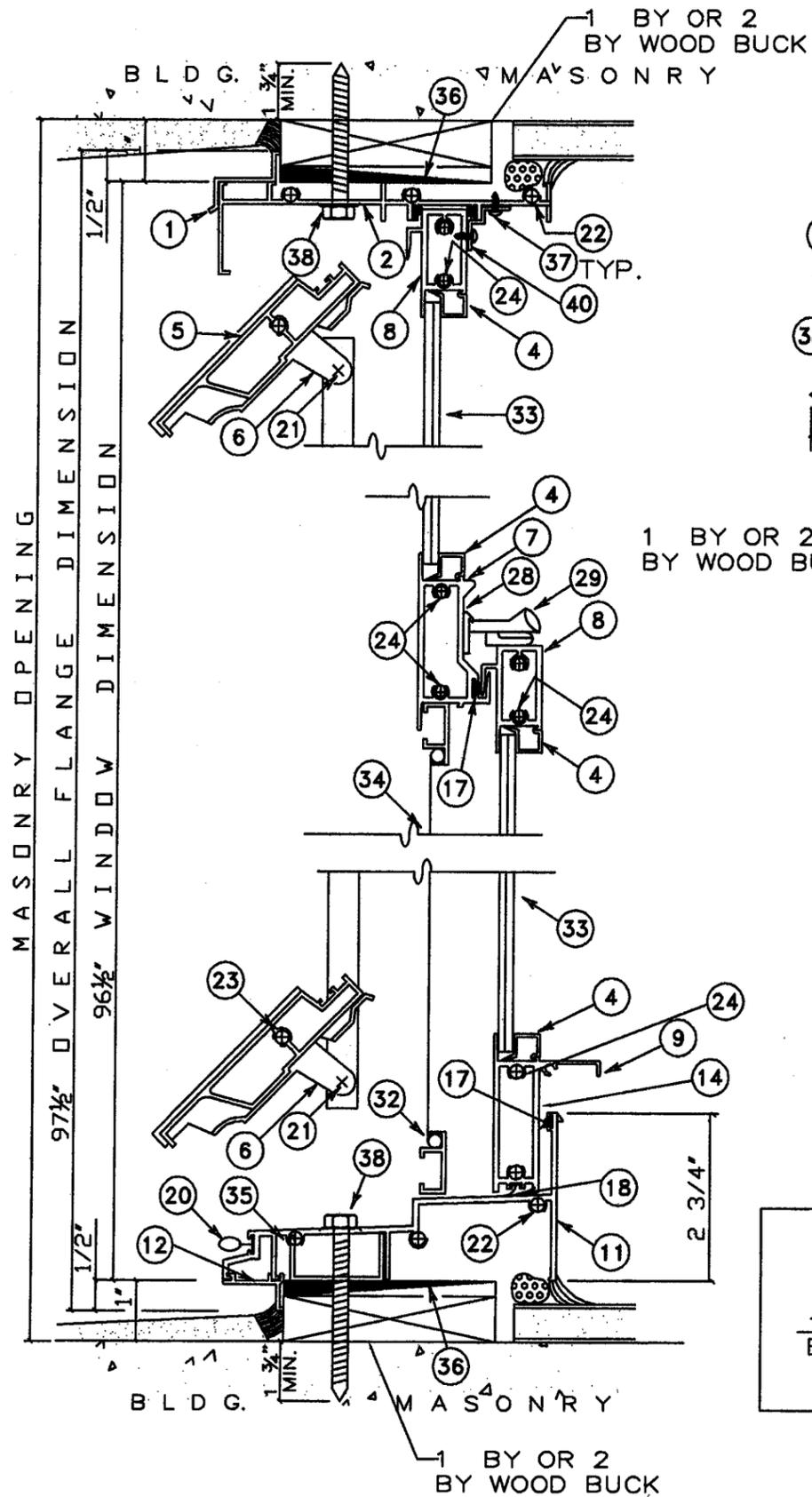


SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

DWG SET # 1-IMPACT

Sheet #
1 OF 10

WOOD BUCKS MUST BE ENGINEERED TO CARRY ALL LOADS IMPOSED BY THE WINDOW, AND AS REVIEWED AND APPROVED BY THE BUILDING OFFICIAL.



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 Miami Dade Product Control
 Division

1 BY OR 2
 BY WOOD BUCK

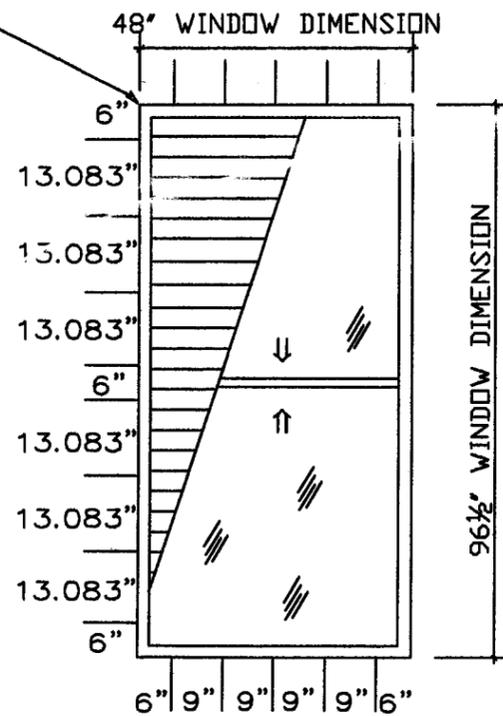
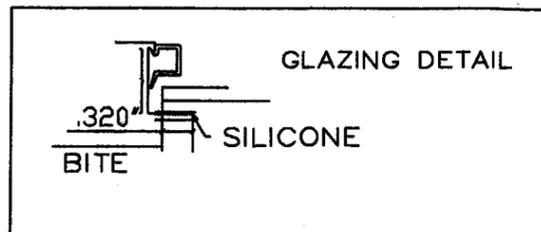
CORNER SEALANT (TYP)

EASTENER SPACING

AS SHOWN ON ELEVATION FOR MAXIMUM SIZE, SEE CHART ON PAGE 9 FOR SMALLER WINDOW SIZES

NOTE:

ELEVATIONS SHOW "WINDOW DIMENSION" AS DEFINED ON DETAIL. TEST REPORTS SHOW OVERALL FLANGE DIMENSION.



DWG SET # 1 - IMPACT

BALLARD L. ARGUS, P.E.
 844 N.W. 91 TERRACE
 PLANTATION, FL 33324

[Signature]

8/20/04
 FLORIDA No. 35686, CIVIL

DADE COUNTY SEAL:

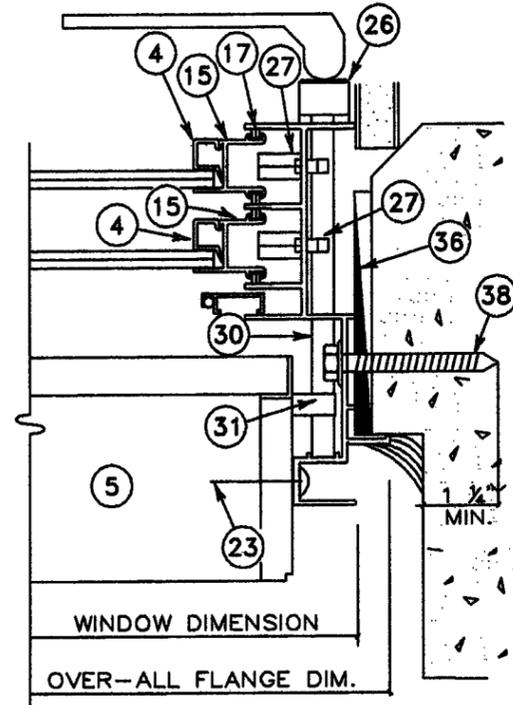
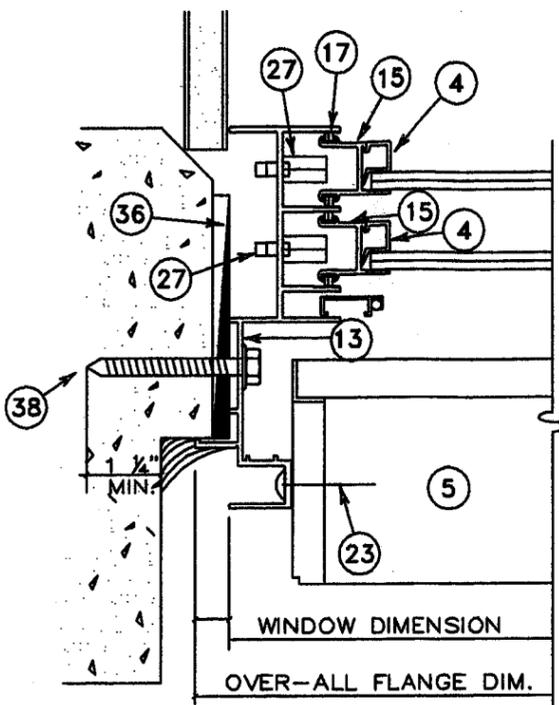
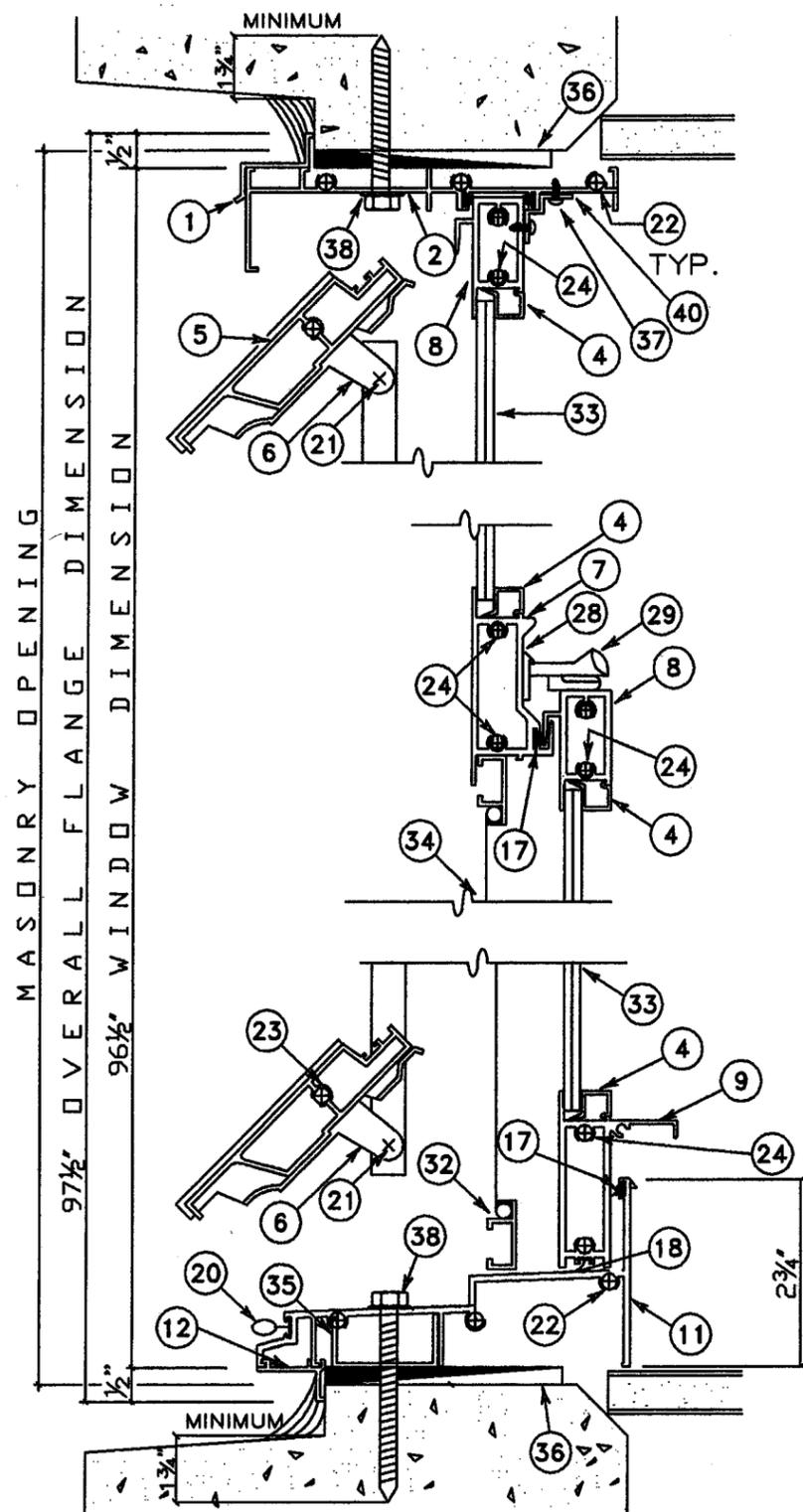
PRODUCT REVISED
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 Acceptance No 05-0125.02
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By *Manuel Perez*
 Miami Dade Product Control
 Division

SOL-A-TROL
 aluminum products
 4101 N.W. 132nd Street
 Miami, Florida 33054
 Phone: (303) 681-2020
 Fax: (305) 681-2035

SERIES 540
 SINGLE/DOUBLE HUNG
 WINDOW WITH LOUVERS
 DADE COUNTY PRODUCT
 APPROVAL DRAWINGS

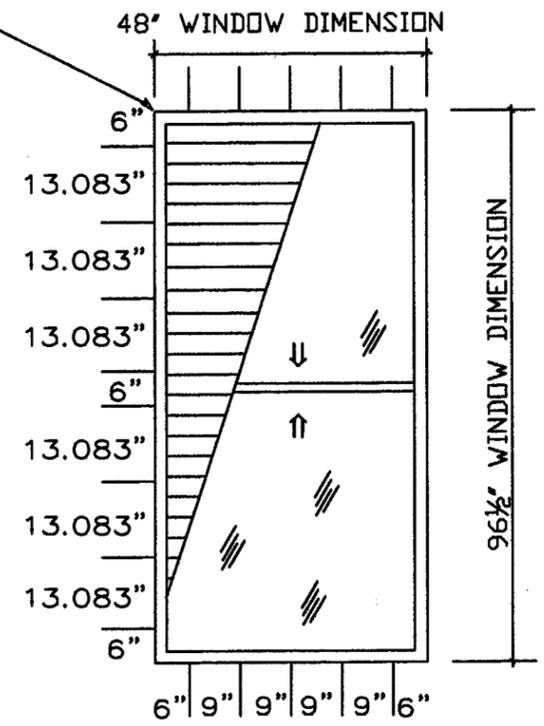
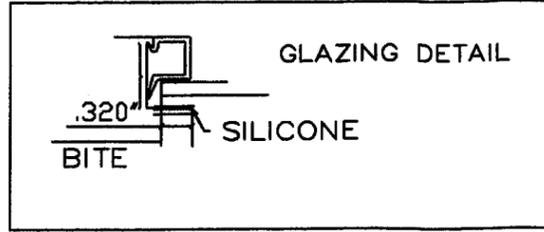
Sheet #
 2 OF 10



CORNER SEALANT (TYP)

FASTENER SPACING
AS SHOWN ON ELEVATION
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CHART ON PAGE 9 FOR
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Building Code
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By *Manuel Perry*
Miami Dade Product Control
Division

ENGINEER SEAL:
BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324
[Signature]
8/20/04
FLORIDA No. 35686, CIVIL

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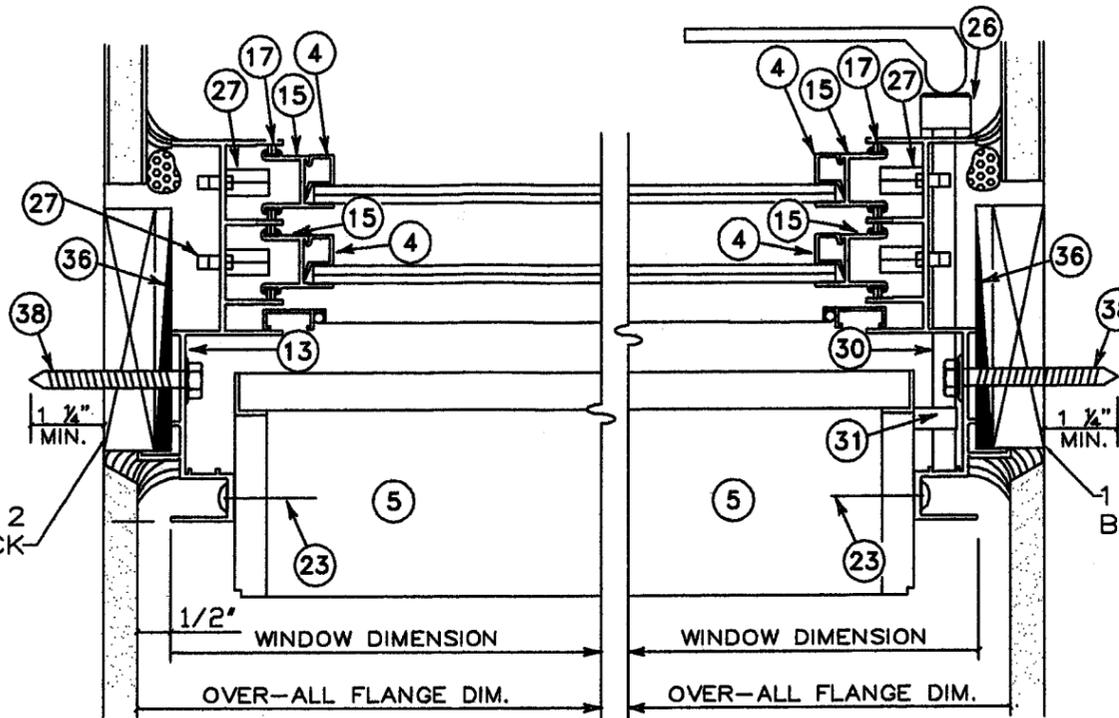
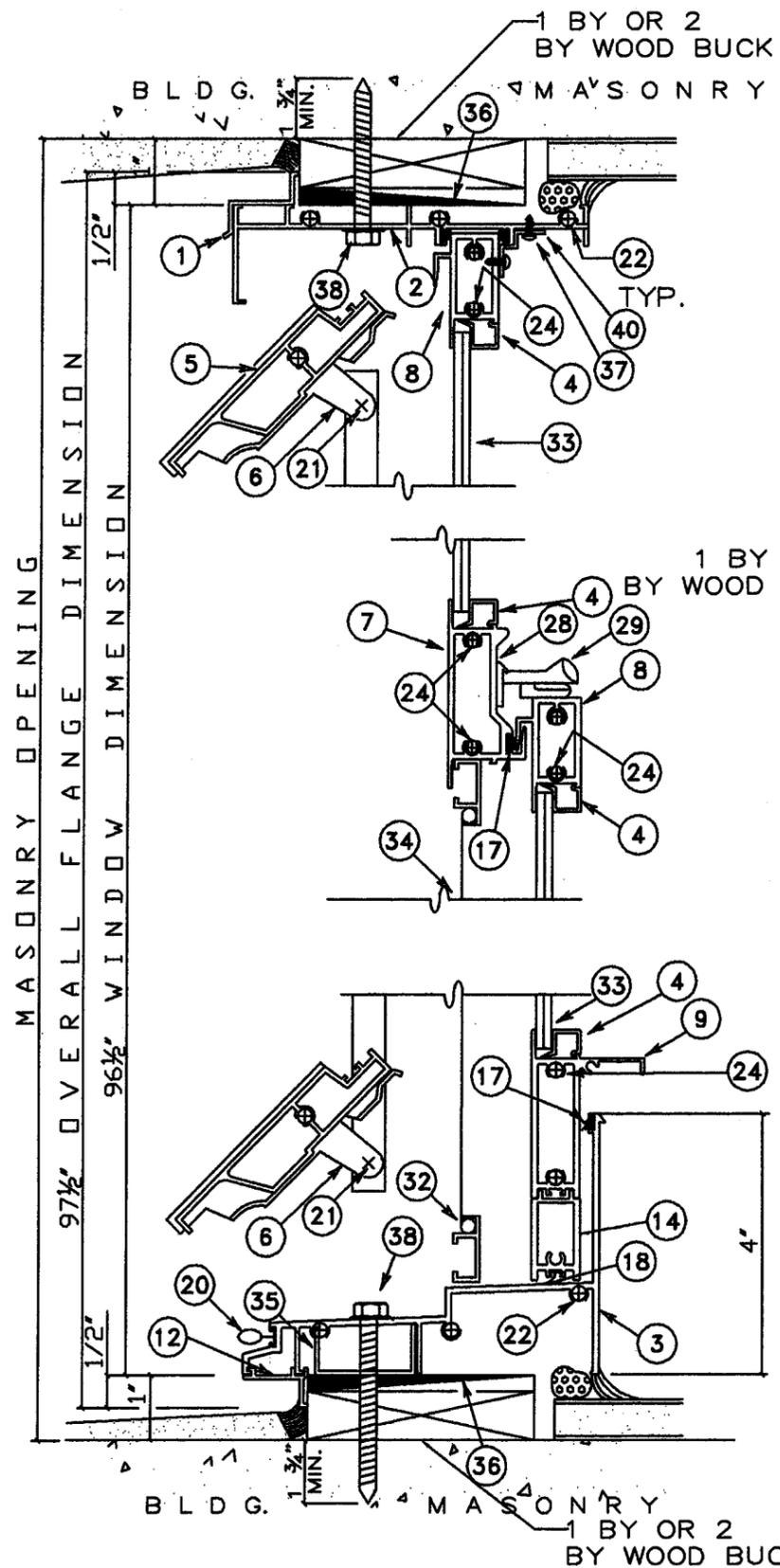
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SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

Sheet #
3 OF 10

WOOD BUCKS MUST BE ENGINEERED TO CARRY ALL LOADS IMPOSED BY THE WINDOW, AND AS REVIEWED AND APPROVED BY THE BUILDING OFFICIAL.



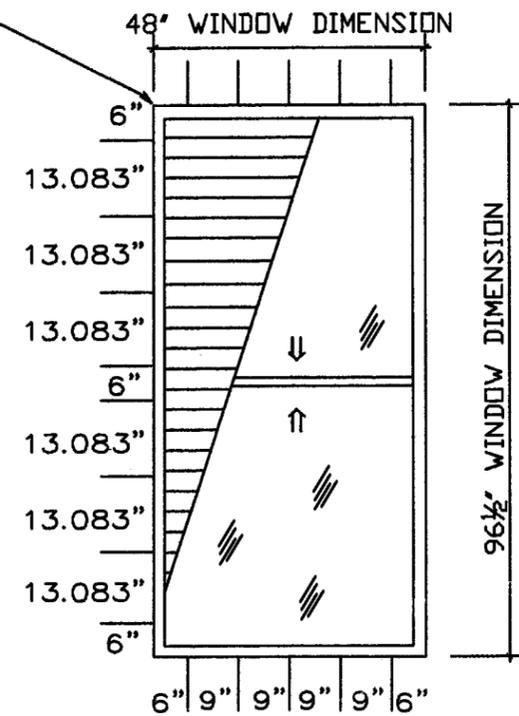
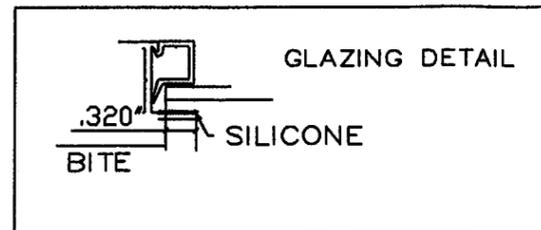
CORNER SEALANT (TYP)

FASTENER SPACING

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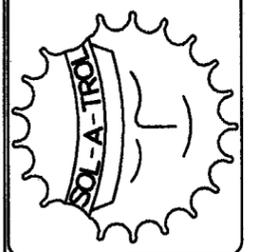


PRODUCT RENEWED as complying with the Florida Building Code
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 By *Manuel Jerez*
 Miami Dade Product Control Division

ENGINEER SEAL:
 BALLARD L. ARGUS, P.E.
 844 N.W. 91 TERRACE
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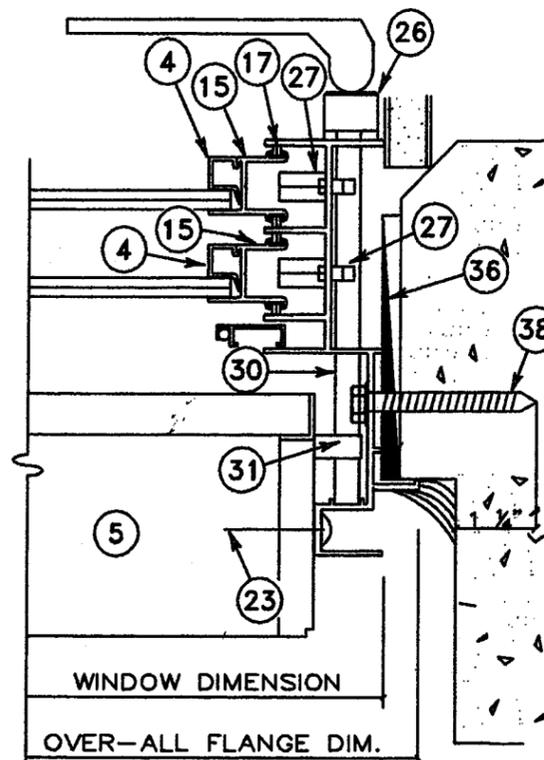
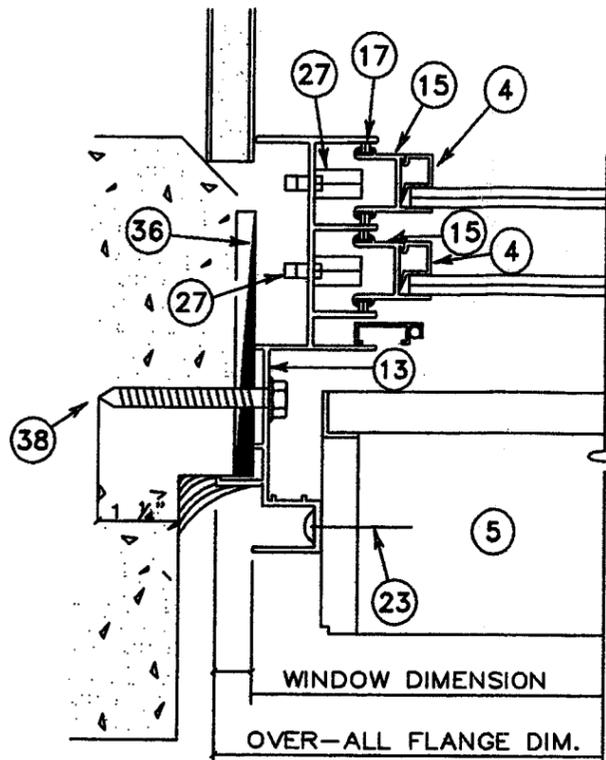
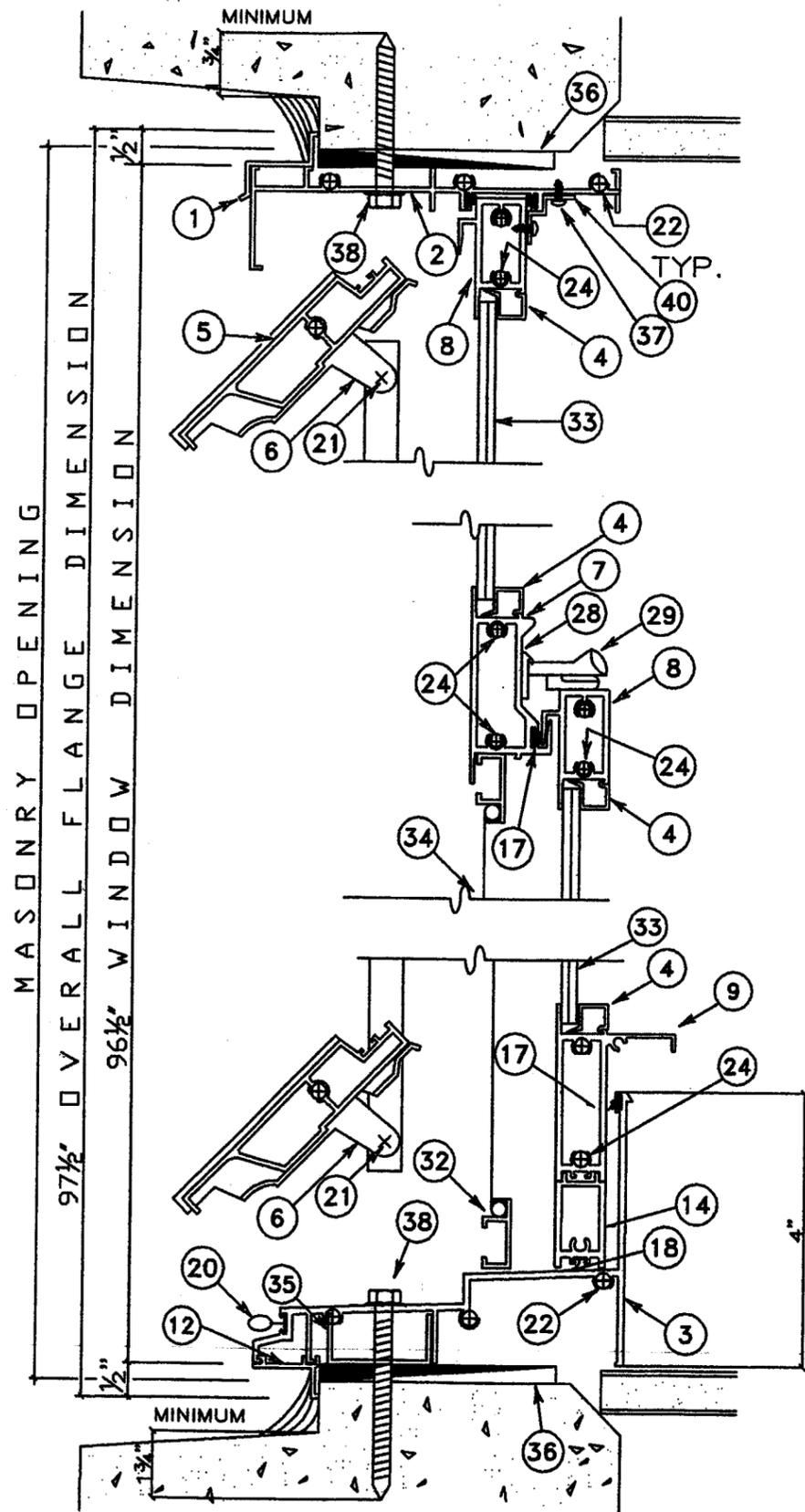
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SERIES 540
 SINGLE/DOUBLE HUNG
 WINDOW WITH LOUVERS
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 APPROVAL DRAWINGS

DWG SET # 1 - IMPACT

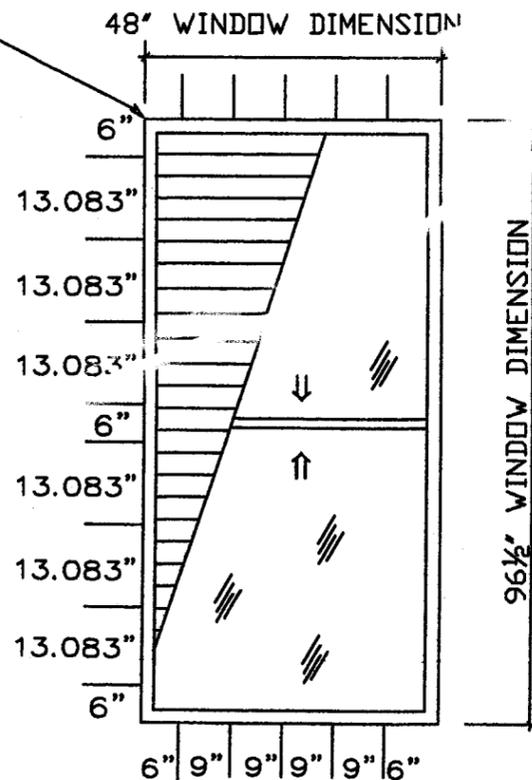
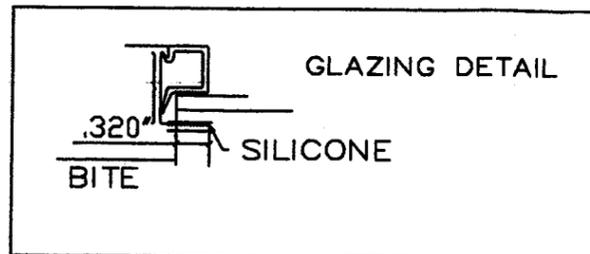
Sheet #
 4 OF 10



CORNER SEALANT (TYP)

FASTENER SPACING
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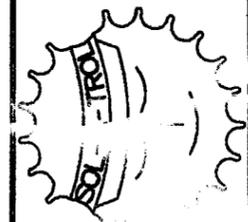


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ENGINEER SEAL
BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324
[Signature]
8/20/09
FLORIDA No. 35686, CIVIL

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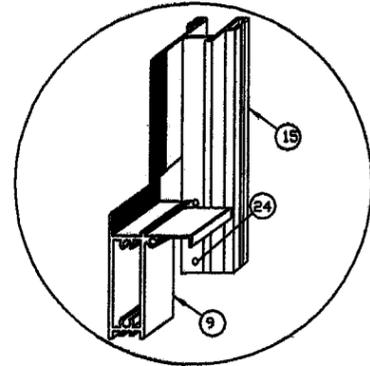


SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

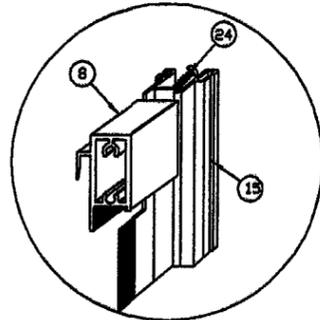
DWG SET # 1 - IMPACT

Sheet #
5 OF 10

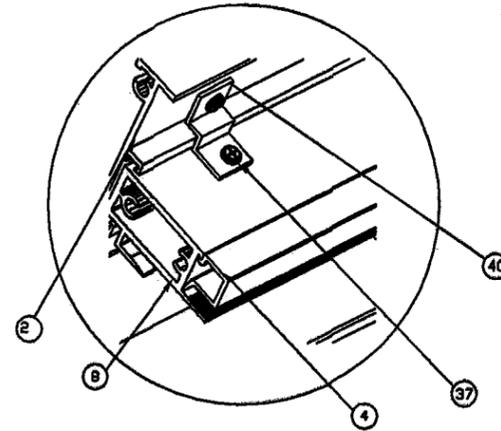
3D DETAIL



VENT BOTTOM RAIL TO STILE CONNECTION



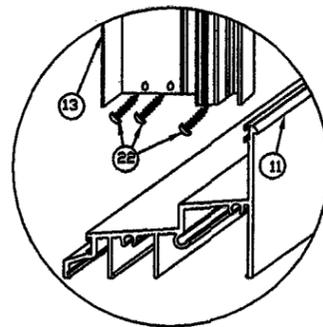
VENT MEETING RAIL TO STILE CONNECTION DETAIL



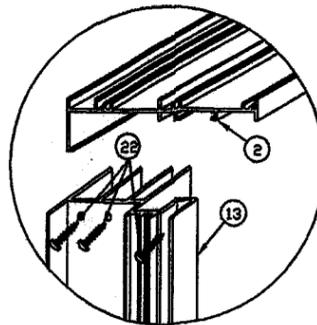
TOP VENT FIX CLIP

NOTE: MEETING RAIL IS NOT FIXED TO FRAME IN EITHER SINGLE OR DOUBLE HUNG CONFIGURATIONS

3D DETAIL



FRAME SILL TO JAMB CONNECT. DET.



FRAME HEAD TO JAMB CONNECT. DET.

BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324



8/20/04
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DADE COUNTY SEAL:

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Expiration Date: MARCH 20, 2008

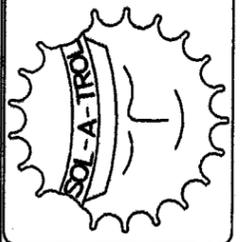
By *Manuel Perez*
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Division

PRODUCT RENEWED
as complying with the Florida
Building Code
Acceptance No. 08-0324-04
Expiration Date 03/20/2013

By *Manuel Perez*
Miami Dade Product Control
Division

DWG SET # 1 - IMPACT

SOL-A-TROL
aluminum products
4101 N.W. 132nd Street
Miami, Florida 33054
Phone: (305) 681-2020
Fax: (305) 681-2035



SERIES 540
SINGLE/DOUBLE HUNG
WINDOW WITH LOUVERS
DADE COUNTY PRODUCT
APPROVAL DRAWINGS

Sheet #
6 OF 10

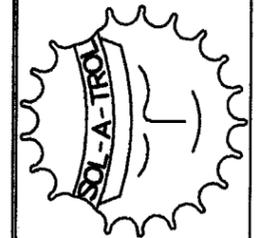
BILL OF MATERIALS FOR ALUMINUM HUNG WINDOW WITH LOUVERS						
ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	MFGR	MFGR #	QTY/WNDO
①	ARSO 8	DRIP CAP	6063-T5 ALUM			1
②	ARSO 3	HEAD	6063-T5 ALUM			1
③	ARSO 210	HWR SILL	6063-T5 ALUM			1
④	ARSO 71	GLAZING BEAD	6063-T5 ALUM			8
⑤	ARSO 69	4" LOUVER BLADE	6063-T5 ALUM			VARIES
⑥	393-R	LOUVER CLIP	3003 ALUM			VARIES
⑦	ARSO 40	MEETING RAIL	6063-T5 ALUM			1
⑧	ARSO 47	TOP / LOWER MEETING RAIL	6063-T5 ALUM			1
⑨	ARSO 41	BOTTOM RAIL	6063-T5 ALUM			1
⑩		NOT USED				
⑪	ARSO 46	SILL	6063-T5 ALUM			1
⑫	ARSO 7	SNAP FLANGE	6063-T5 ALUM			1
⑬	ARSO 2	JAMB	6063-T5 ALUM			2
⑭	ARSO 209	RAIL EXTENDER	6063-T5 ALUM			1
⑮	ARSO 13	STILE	6063-T5 ALUM			4
⑯		NOT USED				
⑰	187	SINGLE FIN WEATHERSTRIPPING (3/16 base, 210 pile height)	POLYPROPYLENE	SCHLEGEL MFG.	# 210187 GYWF	
⑱	187-R	VINYL WEATHERSTRIPPING	P.V.C	BVC	# 150	
⑲		NOT USED				

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BALLARD L. ARGUS, P.E.
844 N.W. 91 TERRACE
PLANTATION, FL 33324
Bl
8/2/04
FLORIDA No. 35686, CIVIL

DADE COUNTY SEAL:
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BILL OF MATERIALS FOR ALUMINUM HUNG WINDOW WITH LOUVERS						
ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	MFGR	MFGR #	QTY/WNDO
20	FP-86-S	VINYL BULB (3/16 base, 9/32 dia. bulb)	P.V.C	PROTOTYPE	# FP-86-S	
21	182	TUBULAR RIVET (.182 X .281 OHSI AP)	ALUM	UNIVERSIAL RIVET	# 119X0281AP	
22	10-A	#10 X 1" STAINLESS STEEL PAN HEAD SCREW	18-8 STAINLESS STEEL			12
23	10-B	#10 X 1 1/4 ST. STEEL PAN HEAD W/ PLASTIC WASHER	18-8 ST. STEEL			
24	10-C	#10 X 1" CADMIUM PLATED STEEL PAN HEAD SCREW	18-8 CAD PLATED STEEL			16
25		NOT USED				
26	149-003	LOUVER HANDLE		THE BRONZE CRAFT	# 149-003	VARIES
27	37-40	BLOCK & TACKLE SASH BALANCE		JW WINDOW COMP.	# 092602	2
28	204-002	KEEPER		THE BRONZE CRAFT	# 204-002-0122	1
29	290-001	SWEEP LOCK		THE BRONZE CRAFT	# 290-001-0122	1
30	313	5/16 HEX ROD	2024-T4 ALUM	BENJAMIN METALS	QQA-225/6E	
31	1580	SPOOL ARM		LIBERTY DIE		
32	ARSO 30	SCREEN FRAME		CASTING		
33	-	1/4" TEMPERED GLAZING				
34	-	INSECT SCREEN		SCREEN TECH	# 36CH600	
35		CANTILEVER SPAN REDUCTION CHANNEL	6063-T5 ALUM	7/8" X 1-11/16" X .090 THK X 3" LONG		VARIES
36	-	1/4" SHIM (THK. X 1 7/8" X 3 5/8" WITH SLOT)	ABS	FALMOUTH PLASTIC & RUBBER	#	
37	10 - D	#10 X 1/2" STAINLESS STEEL PAN HEAD SCREW	18-8 STAINLESS STEEL			4
38	-	1/4 Dia. TAPCON (Length Varies) See cover notes for minimum Embedments				
39		SMALL JOINT SEALER		H.B. FULLER		
40		TOP VENT FIXED CLIP				2

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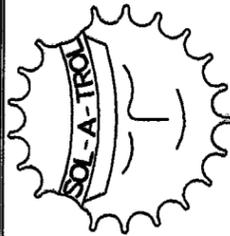
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2/20/09
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SINGLE/DOUBLE HUNG
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APPROVAL DRAWINGS

DWG SET # 1 - IMPACT

Sheet #
8 OF 10

2. Impact/Cyclic Load Test Results, and, PA-202 Comparative Analysis Values:						
Table Values based on Test Report Number		FTL-3059/HETI-04-1386A,B,C		2.750		Inch Sill Height
Miami-Dade County Test Protocols:			Dp allowable, for Substrate and Anchor Type Indicated			
PA-201 Missile Impact Test		Large	4000 psi Concrete at Head and Sill		Required Anchor Quantities using Single Anchors at Each Location	
PA-202 Static Load Test		-390 psf Max	1/4" Dia Tapcon x 1 3/4" Pen			
PA-203 Cyclic Load Test		+75 -75 psf	Hollow Concrete Block at Jamb			
Window Frame Size		Number of Louvers in Unit	1/4" Dia Tapcon x 1 1/4" Pen			
Width (in)	Height (in)		+ Pos Dp (psf)	- Neg Dp (psf)	Head/Sill Anchors	Jamb Anchors
24	23	6	75.0	-210.0*	2	4
24	33 1/2	9	75.0	-210.0*	2	4
24	44	12	75.0	-210.0*	2	4
24	54 1/2	15	75.0	-210.0*	2	6
24	65	18	75.0	-210.0*	2	6
24	75 1/2	21	75.0	-210.0*	2	8
24	86	24	75.0	-210.0*	2	8
24	96 1/2	27	75.0	-198	2	8
29	23	6	75.0	-210.0*	3	4
29	33 1/2	9	75.0	-210.0*	3	4
29	44	12	75.0	-179.7	3	4
29	54 1/2	15	75.0	-174.1	3	6
29	65	18	75.0	-146	3	6
29	75 1/2	21	75.0	-125.7	3	8
29	86	24	75.0	-110.3	3	8
29	96 1/2	27	75.0	-98.3	3	8
34	23	6	75.0	-210.0*	3	4
34	33 1/2	9	75.0	-201.3	3	4
34	44	12	75.0	-153.2	3	4
34	54 1/2	15	75.0	-134.5	3	6
34	65	18	75.0	-112.8	3	6
34	75 1/2	21	75.0	-97.1	3	8
34	86	24	75.0	-85.2	3	8
34	96 1/2	27	75.0	-76	3	8
39	23	6	75.0	-210.0*	4	4
39	33 1/2	9	75.0	-175.5	4	4
39	44	12	75.0	-133.6	4	4
39	54 1/2	15	75.0	-130.2	4	6
39	65	18	75.0	-121.8	4	6
39	75 1/2	21	75.0	-118.5	4	8
39	86	24	75.0	-104.2	4	8
39	96 1/2	27	75.0	-92.8	4	8
44	23	6	75.0	-204.7	4	4
44	33 1/2	9	75.0	-180.9	4	4
44	44	12	75.0	-118.4	4	4
44	54 1/2	15	75.0	-108.8	4	6
44	65	18	75.0	-99.8	4	6
44	75 1/2	21	75.0	-94.9	4	8
44	86	24	75.0	-87.9	4	8
44	96 1/2	27	75.0	-78.3	4	8
49	23	6	75.0	-181	5	4
49	33 1/2	9	75.0	-132.3	5	4
49	44	12	75.0	-106.3	5	4
49	54 1/2	15	75.0	-93.4	5	6
49	65	18	75.0	-84.6	5	6
49	75 1/2	21	75.0	-79.2	5	8
49	86	24	75.0	-76.1	5	8
49	96 1/2	27	75.0	-75	5	8
49	97 1/2	Test Size for C.A.	75.0	-75	5	8

SERIES 540
WITH STANDARD SILL
AND IMPACT RESISTANT
LOUVERS

IMPACT/ CYCLIC LOAD TEST
PERFORMANCE IS INCLUDED IN
SUMMARY TABLE

Notes to Impact Test, Cyclic Load Test, and Comparative Analysis Summary Table:

1. Locate Head and Sill Single Anchors at 6 inches max from frame ends and 12 inches O.C. maximum, per test mock-up.
2. Locate Jamb Single Anchors at 6 inches max from frame ends and 13.75 inches O.C. maximum, per test mock-up.
3. Locate one (1) Jamb Anchor at 3 inches maximum above the meeting rail Center Line.
Locate one (1) Jamb Anchor at 3 inches maximum below the meeting rail Center Line.
4. Above anchor spacings are maximums -- Reduce anchor spacing from frame ends, if required to maintain 3" minimum spacing between adjacent anchors.

* - Maximum negative design pressure limited to -210.0 PSF per ASTM E1300.

ENGINEER SEAL:
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844 N.W. 97 TERRACE
PLANTATION, FL 33324

[Signature]

8/20/08
FLORIDA No. 35686, CIVIL

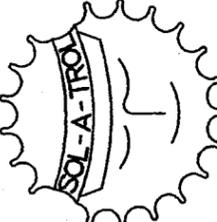
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2. Impact/Cyclic Load Test Results and PA-202 Comparative Analysis Values:

Table Values based on Test Report Number		FTL-3059/ HETI-04-1386A,B,C		4.000		Inch Sill Height	
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29	86	24	106.7	-110.3	3	8	
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34	44	12	106.7	-153.2	3	4	
34	54 1/2	15	106.7	-134.5	3	6	
34	65	18	106.7	-112.8	3	6	
34	75 1/2	21	97.1	-97.1	3	8	
34	86	24	85.2	-85.2	3	8	
34	96 1/2	27	76.0	-76	3	8	
39	23	6	106.7	-210.0*	4	4	
39	33 1/2	9	106.7	-175.5	4	4	
39	44	12	106.7	-133.6	4	4	
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44	33 1/2	9	106.7	-150.9	4	4	
44	44	12	106.7	-118.4	4	4	
44	54 1/2	15	106.7	-108.8	4	6	
44	65	18	99.8	-99.8	4	6	
44	75 1/2	21	94.9	-94.9	4	8	
44	86	24	87.9	-87.9	4	8	
44	96 1/2	27	78.3	-78.3	4	8	
49	23	6	106.7	-181.1	5	4	
49	33 1/2	9	106.7	-132.3	5	4	
49	44	12	106.7	-106.3	5	4	
49	54 1/2	15	93.4	-93.4	5	6	
49	65	18	84.6	-84.6	5	6	
49	75 1/2	21	79.2	-79.2	5	8	
49	86	24	76.1	-76.1	5	8	
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SERIES 540
WITH 'HWR' SILL
AND IMPACT RESISTANT
LOUVERS

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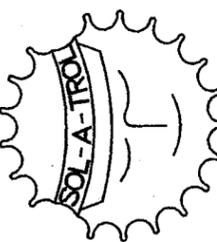
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